

the FEV1/FVC ratio, expressed as a percentage. If the maximum voluntary ventilation (MVV) is reported, the results of such test shall be obtained independently rather than calculated from the results of the FEV1.

(b) All pulmonary function test results submitted in connection with a claim for benefits shall be accompanied by three tracings of the flow versus volume and the electronically derived volume versus time tracings. If the MVV is reported, two tracings of the MVV whose values are within 10% of each other shall be sufficient. Pulmonary function test results developed in connection with a claim for benefits shall also include a statement signed by the physician or technician conducting the test setting forth the following:

- (1) Date and time of test;
- (2) Name, DOL claim number, age, height, and weight of claimant at the time of the test;
- (3) Name of technician;
- (4) Name and signature of physician supervising the test;
- (5) Claimant's ability to understand the instructions, ability to follow directions and degree of cooperation in performing the tests. If the claimant is unable to complete the test, the person executing the report shall set forth the reasons for such failure;
- (6) Paper speed of the instrument used;
- (7) Name of the instrument used;
- (8) Whether a bronchodilator was administered. If a bronchodilator is administered, the physician's report must detail values obtained both before and after administration of the bronchodilator and explain the significance of the results obtained; and
- (9) That the requirements of paragraphs (b) and (c) of this section have been complied with.

(c) Except as provided in this paragraph, no results of a pulmonary function study shall constitute evidence of the presence or absence of a respiratory or pulmonary impairment unless it is conducted and reported in accordance with the requirements of this section and Appendix B to this part. In the absence of evidence to the contrary, compliance with the requirements of Appendix B shall be pre-

sumed. In the case of a deceased miner, where no pulmonary function tests are in substantial compliance with paragraphs (a) and (b) and Appendix B, non-complying tests may form the basis for a finding if, in the opinion of the adjudication officer, the tests demonstrate technically valid results obtained with good cooperation of the miner.

§ 718.104 Report of physical examinations.

(a) A report of any physical examination conducted in connection with a claim shall be prepared on a medical report form supplied by the Office or in a manner containing substantially the same information. Any such report shall include the following information and test results:

- (1) The miner's medical and employment history;
- (2) All manifestations of chronic respiratory disease;
- (3) Any pertinent findings not specifically listed on the form;
- (4) If heart disease secondary to lung disease is found, all symptoms and significant findings;
- (5) The results of a chest X-ray conducted and interpreted as required by § 718.102; and
- (6) The results of a pulmonary function test conducted and reported as required by § 718.103. If the miner is physically unable to perform a pulmonary function test or if the test is medically contraindicated, in the absence of evidence establishing total disability pursuant to § 718.304, the report must be based on other medically acceptable clinical and laboratory diagnostic techniques, such as a blood gas study.

(b) In addition to the requirements of paragraph (a), a report of physical examination may be based on any other procedures such as electrocardiogram, blood-gas studies conducted and reported as required by § 718.105, and other blood analyses which, in the physician's opinion, aid in his or her evaluation of the miner.

(c) In the case of a deceased miner, where no report is in substantial compliance with paragraphs (a) and (b), a report prepared by a physician who is unavailable may nevertheless form the basis for a finding if, in the opinion of

the adjudication officer, it is accompanied by sufficient indicia of reliability in light of all relevant evidence.

(d) *Treating physician.* In weighing the medical evidence of record relevant to whether the miner suffers, or suffered, from pneumoconiosis, whether the pneumoconiosis arose out of coal mine employment, and whether the miner is, or was, totally disabled by pneumoconiosis or died due to pneumoconiosis, the adjudication officer must give consideration to the relationship between the miner and any treating physician whose report is admitted into the record. Specifically, the adjudication officer shall take into consideration the following factors in weighing the opinion of the miner's treating physician:

(1) *Nature of relationship.* The opinion of a physician who has treated the miner for respiratory or pulmonary conditions is entitled to more weight than a physician who has treated the miner for non-respiratory conditions;

(2) *Duration of relationship.* The length of the treatment relationship demonstrates whether the physician has observed the miner long enough to obtain a superior understanding of his or her condition;

(3) *Frequency of treatment.* The frequency of physician-patient visits demonstrates whether the physician has observed the miner often enough to obtain a superior understanding of his or her condition; and

(4) *Extent of treatment.* The types of testing and examinations conducted during the treatment relationship demonstrate whether the physician has obtained superior and relevant information concerning the miner's condition.

(5) In the absence of contrary probative evidence, the adjudication officer shall accept the statement of a physician with regard to the factors listed in paragraphs (d)(1) through (4) of this section. In appropriate cases, the relationship between the miner and his treating physician may constitute substantial evidence in support of the adjudication officer's decision to give that physician's opinion controlling weight, provided that the weight given to the opinion of a miner's treating physician shall also be based on the credibility of the physician's opinion in

light of its reasoning and documentation, other relevant evidence and the record as a whole.

§ 718.105 Arterial blood-gas studies.

(a) Blood-gas studies are performed to detect an impairment in the process of alveolar gas exchange. This defect will manifest itself primarily as a fall in arterial oxygen tension either at rest or during exercise. No blood-gas study shall be performed if medically contraindicated.

(b) A blood-gas study shall initially be administered at rest and in a sitting position. If the results of the blood-gas test at rest do not satisfy the requirements of Appendix C to this part, an exercise blood-gas test shall be offered to the miner unless medically contraindicated. If an exercise blood-gas test is administered, blood shall be drawn during exercise.

(c) Any report of a blood-gas study submitted in connection with a claim shall specify:

- (1) Date and time of test;
- (2) Altitude and barometric pressure at which the test was conducted;
- (3) Name and DOL claim number of the claimant;
- (4) Name of technician;
- (5) Name and signature of physician supervising the study;
- (6) The recorded values for PCO₂, PO₂, and PH, which have been collected simultaneously (specify values at rest and, if performed, during exercise);
- (7) Duration and type of exercise;
- (8) Pulse rate at the time the blood sample was drawn;
- (9) Time between drawing of sample and analysis of sample; and
- (10) Whether equipment was calibrated before and after each test.

(d) If one or more blood-gas studies producing results which meet the appropriate table in Appendix C is administered during a hospitalization which ends in the miner's death, then any such study must be accompanied by a physician's report establishing that the test results were produced by a chronic respiratory or pulmonary condition. Failure to produce such a report will prevent reliance on the blood-gas study as evidence that the miner was totally disabled at death. (e) In the case of a deceased miner, where no blood gas